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### AMENDMENTS TO THE CLAIMS

Please add or amend the claims to read as follows, and cancel without prejudice or disclaimer to resubmission in a divisional or continuation application claims 1-20 indicated as cancelled:

1- 20 (Cancelled)

21. (New) A specimen enclosure assembly for use in an electron microscope and comprising:

a specimen enclosure dish having an aperture and defining an enclosed specimen placement volume;

an electron beam permeable, fluid impermeable, cover sealing said specimen placement volume at said aperture from a volume outside said specimen enclosure assembly; and

a pressure controller communicating with said enclosed specimen placement volume, said pressure controller being configured for maintaining said enclosed specimen placement volume at a pressure which exceeds a vapor pressure of a sample in said specimen placement volume and is greater than a pressure of a volume outside said specimen enclosure assembly, wherein a pressure differential across said cover does not exceed a threshold level at which rupture of said cover would occur.

22. (New) A specimen enclosure assembly according to claim 21 and wherein said specimen enclosure dish is a rigid specimen enclosure dish.

23. (New) A specimen enclosure assembly according to claim 21 and wherein said pressure controller comprises a passageway communicating with said enclosed specimen placement volume.

24. (New) A specimen enclosure assembly according to claim 23 and wherein said passageway comprises a fluid conduit having a lumen whose cross section is sufficiently

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small so as to maintain said pressure, which exceeds said vapor pressure of said sample in said specimen placement volume and is greater than said pressure of said volume outside said specimen enclosure assembly.

25. (New) A specimen enclosure assembly according to claim 24 and wherein said fluid conduit comprises a tube.

26. (New) A specimen enclosure assembly according to claim 24 and wherein said lumen of said fluid conduit has a circular cross section having a diameter in the range of 50 - 150 micrometers.

27. (New) A specimen enclosure assembly according to claim 24 and wherein said fluid conduit communicates with a fluid reservoir.

28. (New) A specimen enclosure assembly according to claim 27 and wherein said fluid reservoir comprises at least one fluid channel in fluid communication with said fluid conduit and a passageway formed in said fluid reservoir for fluid communication with said volume outside said specimen enclosure assembly.

29. (New) A specimen enclosure assembly according to claim 28 and wherein said fluid channel of said fluid reservoir comprises at least one tube.

30. (New) A specimen enclosure assembly according to claim 28 and wherein said passageway formed in said fluid reservoir comprises a fluid conduit having a lumen whose cross section is sufficiently small so as to maintain a pressure, which exceeds said vapor pressure of said sample in said specimen placement volume and is greater than said pressure of said volume outside said specimen enclosure assembly and said fluid reservoir.

31. (New) A specimen enclosure assembly according to claim 21 and also comprising a fluid ingress and egress assembly permitting supply and removal of fluid from said enclosed

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specimen placement volume.

32. (New) A specimen enclosure assembly according to claim 31 and wherein said fluid ingress and egress assembly comprises at least two fluid conduits.

33. (New) A specimen enclosure assembly according to claim 32 and wherein said at least one fluid conduit of said fluid ingress and egress assembly comprises at least two tubes.

34. (New) A method for constructing a specimen enclosure assembly for use in a scanning electron microscope comprising:

providing a specimen enclosure dish having an aperture and defining an enclosed specimen placement volume;

attaching an electron beam permeable, fluid impermeable, cover to said specimen placement volume at said aperture for sealing said aperture from a volume outside said specimen enclosure assembly; and

providing a pressure controller communicating with said enclosed specimen placement volume, said pressure controller being configured for maintaining said enclosed specimen placement volume at a pressure, which exceeds a vapor pressure of a sample in said specimen placement volume and is greater than a pressure of a volume outside said specimen enclosure assembly, wherein a pressure differential across said cover does not exceed a threshold level at which rupture of said cover would occur.

35. (New) A method according to claim 34 and wherein said providing said pressure controller comprises forming in said specimen enclosure assembly a passageway communicating with said volume outside said specimen enclosure assembly.

36. (New) A method according to claim 35 and wherein said providing said pressure controller comprises sealingly attaching to said passageway a fluid conduit having a lumen whose cross section is sufficiently small to maintain said pressure, which exceeds said vapor pressure of said sample in said specimen placement volume and is greater than said pressure

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of said volume outside said specimen enclosure assembly.

37. (New) A method according to claim 36 wherein said fluid conduit comprises at least one tube.

38. (New) A method according to claim 37 and wherein said lumen of said fluid conduit has a circular cross section having a diameter in the range of 50 - 150 micrometers.

39. (New) A method according to claim 36 and also including providing a fluid reservoir in fluid communication with said specimen enclosure assembly.

40. (New) A method according to claim 39 and wherein said fluid reservoir comprises at least one fluid channel in fluid communication with said fluid conduit and a passageway formed in said fluid reservoir for communicating with said volume outside said specimen enclosure assembly.

41. (New) A method according to claim 40 and wherein said fluid channel of said fluid reservoir comprises at least one tube.

42. (New) A method according to claim 40 and wherein said passageway formed in said fluid reservoir comprises a fluid conduit having a lumen whose cross section is sufficiently small so as to maintain a pressure, which exceeds said vapor pressure of said sample in said specimen placement volume and is greater than said pressure of a volume outside said specimen enclosure assembly and said fluid reservoir.

43. (New) A method according to claim 40 and wherein said passageway formed in said fluid reservoir also comprises a tube with a circular cross section having a diameter in the range of 50 - 150 micrometers.

44. (New) A method according to claim 34 and also comprising providing a fluid ingress

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and egress assembly communicating with said enclosed specimen placement volume for permitting supply and removal of fluid from said enclosed specimen placement volume.

45. (New) A method according to claim 44 and wherein said fluid ingress and egress assembly comprises at least two fluid conduits.

46. (New) A method according to claim 45 and wherein said at least one fluid conduit of said fluid ingress and egress assembly comprises at least two tubes communicating with said specimen placement volume.